WE CLAIM:

1. A seed planter apparatus comprising:

a seed meter including a housing assembly, the housing assembly including a cover releasably connected to a shell, the housing assembly including at least one opening formed in the housing assembly adjacent a seed discharge area to promote the release of seeds from a disc rotatably attached to the housing assembly, the disc dividing an interior of the housing assembly to include a vacuum chamber and a seed chamber, the disc including a plurality of openings formed adjacent a periphery of the disc.

2. The apparatus of claim 1 wherein the at least one opening formed in the housing assembly comprises a plurality of openings formed through the housing assembly.

3. The apparatus of claim 1 wherein the at least one opening is formed through the shell.

4. The apparatus of claim 1 wherein the at least one opening is formed in the cover ~~court~~.

5. The apparatus of claim 4 wherein the disc includes a center opening to receive an end portion of a rotatable shaft.

6. The apparatus of claim 4 wherein the shaft is received in an opening formed in a hub formed in the shell.

7. The apparatus of claim 6 wherein the hub is adapted to receive a baffle.

~~8. The apparatus of claim 8 wherein the seed disc openings~~ comprise a plurality of spaced apart clusters of openings.

9. The apparatus of claim 8 wherein each of the clusters include a plurality of openings which communicate with a recessed area formed in a surface of the disc to allow the seeds to drop at substantially the same time as the disc rotates the cluster out of the vacuum chamber.

10. The apparatus of claim 9 wherein the disc includes a plurality of ~~wear depression formed thereon~~.

openings of the seed cluster
~~11.~~ The apparatus of claim 1 wherein the seed ~~group~~ are partially covered by a singulator spool.

~~12.~~ The apparatus of claim ~~11~~ wherein the singulator includes a plurality of spools, each spool partially covering the seed ~~spool~~ openings of the cluster.

~~13. The apparatus of claim 1 wherein the shell includes a seed~~ opening found thereon to receive seed from a hopper, the seed opening movably covered by a baffle.

14. The apparatus of claim 13 wherein the baffle includes an adjustment handle which extends through an elongated opening found in the shell.

15, The apparatus of claim 14 wherein the shell includes a plurality of indentions to receive the adjustment handle and allows the baffle to be positioned to allow more or less seed to flow from the hopper into the seed ~~chamber~~.

10 ~~16~~. The apparatus of claim 1 wherein the housing includes an axially extending circumferential wall, the circumferential wall including an opening formed thereon to allow air to flow into the seed chamber.

11 ~~17~~. The apparatus of claim 10 ~~16~~ wherein the opening found in the circumferential wall is covered by a screen.

12 ~~18~~. The apparatus of claim 1 wherein the seed disc comprises an aliphatic polyketone ~~Carilon®~~.

13 ~~19~~. The apparatus of claim 1 wherein the cover comprises plastic ~~Estaloc™~~.

14-15 ~~20~~. A method of operating a seed planter apparatus comprising:

providing a housing assembly including a cover releasably connected to a shell, the housing assembly including at least one opening formed in the housing assembly adjacent a seed discharge area, a disc rotatably attached to the housing assembly, the disc dividing an interior of the housing assembly to include a vacuum chamber and a seed chamber, the disc including a plurality of openings formed adjacent a periphery of the disc;

rotating the disc;

holding seeds in the disc openings while the disc openings communicate with the vacuum chamber;

releasing the seeds from the openings as the disc openings exit from the communication with the vacuum chamber; and

flowing air through the at least one opening formed in the housing assembly to promote the release of seeds from the disc.

15 ~~21~~. The method of claim 14 ~~20~~ wherein the at least one opening formed in the housing assembly comprises a plurality of openings, flowing air through the openings.

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16 14 an aliphatic polyketone

~~28~~. The method of claim ~~20~~ wherein the disc comprises ~~Carilon®~~ and the cover comprises ~~Estalbe™~~ plastic, contacting the disc with the cover.

23. The method of claim 20 wherein the seed disc openings comprise a plurality of spaced apart clusters, each cluster including a plurality of openings which communicate;

exposing a portion of a cluster to atmospheric pressure; and

releasing seeds from each opening of the cluster.

24. A seed planter apparatus comprising:

a seed meter including a vacuum chamber, a seed chamber, and a seed disc, the seed disc including a plurality of spaced apart clusters formed therein, each of the clusters including a plurality of communicating openings to allow seeds held by differential pressure within the openings of each cluster to release the seeds together as the cluster exists from communication with the vacuum chamber.

25. The apparatus of claim 24 further comprising a hopper operatively connected to a chute formed in a housing of the seed meter.

26. The apparatus of claim 24 wherein the seed disc comprises ~~Carilon®~~.

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~~37. The apparatus of claim 32 wherein the baffle is a one-piece~~ baffle formed of steel.

38. The apparatus of claim 32 further comprising a cover engaged with the housing, the cover including indicators inscribed on an outside surface of the cover and aligned with the notches.

39. A method of operating a seed metering apparatus for a seed planter comprising:

providing a housing including a seed chamber opening for communicating with a hopper, a baffle rotatably attached to the housing, the baffle including a body portion and a handle portion, the handle extending through an opening formed in the housing, the housing including a plurality of notches formed on an outer surface of the housing;

moving the handle portion between the notches;

retaining the handle portion in the notch;

rotating the body portion to vary the size of the seed chamber ~~opening.~~

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~~40~~. A seed metering apparatus for a seed planter comprising:

a housing assembly including a singulator assembly attached thereto, the singulator assembly including at ~~least~~ one spool rotatably attached to a body portion of the singulator assembly, the spool including a circular cross-section, the spool in contact with a seed disc, the seed disc including a plurality of openings formed adjacent a periphery of the disc, the spool partially covering the openings.

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~~41~~. The apparatus of claim ~~40~~ wherein the spool is spring-biased against the seed disc.

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~~42~~. The apparatus of claim ~~40~~ wherein the spool has a frusto-conical shape.

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~~43~~. the apparatus of claim ~~40~~ wherein a first spool is positioned to partially cover a top portion of the openings, and a second spool is positioned to cover a bottom portion of the openings.

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~~44~~. The apparatus of claim ~~43~~ wherein a third spool covers a top portion of the openings.

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~~45~~. The apparatus of claim ~~40~~ wherein the spool comprises an aliphatic polyketone ~~Carilon®~~.

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~~46~~. A method of operating a seed metering apparatus for a seed planter comprising:

providing a housing assembly including a singulator assembly attached thereto, the singulator assembly including a plurality of spools rotatably attached to a body portion of the singulator assembly;

providing a seed disc including a plurality of openings formed adjacent a periphery of the disc;

contacting a seed disc with the spools;

partially covering the openings with the spools;

contacting the spools with seeds; and

rotating the spools.

27. A method of operating a seed planter apparatus comprising:

providing a seed meter including a vacuum chamber, a seed chamber, and a seed disc, the seed disc including a plurality of spaced apart clusters formed therein, each of the clusters including a plurality of communicating openings; and

rotating the seed disc and clusters while in communication with a vacuum chamber;

holding a seed within each opening of the cluster;

rotating the cluster out of communication with the vacuum chamber;

releasing the seeds from the openings of each cluster substantially simultaneously.

28. A seed planter apparatus comprising:

a seed meter including a housing assembly, the housing assembly including a chute portion and a seed chamber, the chute portion including a first opening for receiving seed from a hopper which communicates with the first opening, the chute including a second opening formed therein, a bar extending from a portion of the chute and positioned above the second opening, a door shaped to cover the second opening and including a clip portion for snap-fitting onto the bar to allow the door to rotate on the bar.

29. The apparatus of claim 28 wherein the door includes a collar for receiving a pin which locks the door to the housing.

~~30. The apparatus of claim 28 wherein the door is made of plastic.~~

31. A method of operating a seed planter apparatus comprising:

providing a seed meter including a housing assembly, the housing assembly including a chute portion and a seed chamber, the chute portion including a first opening in communication with a hopper, the chute including a second opening formed therein, a bar extending from a portion of the chute and positioned above the second opening, a door shaped to cover the second opening and including a clip portion snap fitted to the bar;

rotating the door about the bar;

passing seed from the hopper through the first opening; and

passing seed through the second opening.

32. A seed metering apparatus for a seed planter comprising:

a housing including a seed chamber opening for communicating with a hopper, a baffle rotatably attached to the housing, the baffle including a body portion and a handle portion, the handle portion extending through an opening formed in the housing, the housing including a plurality of notches formed on an outer surface of the housing to allow the handle to be positioned within the notches to rotate the body portion and vary the size of the seed chamber opening.

33. The apparatus of claim 32 wherein the body portion of the baffle is retained by at least one retaining member.

34. The apparatus of claim 33 wherein the body portion is retained by a first retaining portion positioned adjacent a hub formed in the housing, the body portion including an opening for fitting onto the hub, the baffle rotatable about the hub.

35. The apparatus of claim 34 wherein the body portion is retained by a second retaining portion positioned adjacent a periphery of the housing.

36. The apparatus of claim 32 wherein the baffle is a one-piece ~~baffle formed of plastic~~.